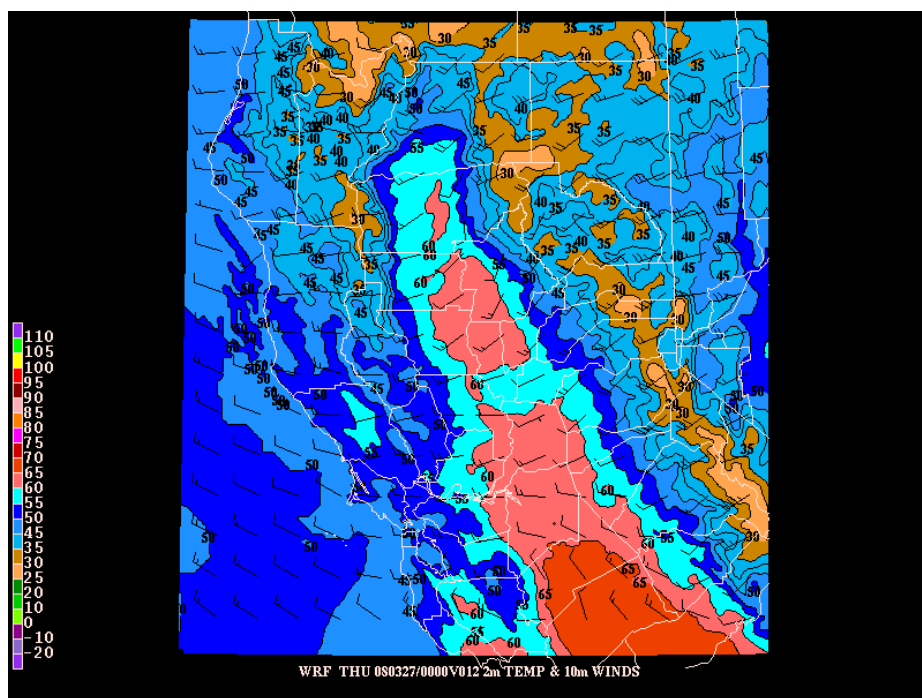**Experimental Sacramento WRF_NMM Model Output**
Product Description Document (PDD)

Part I – Mission Connection

a. <u>Product Description</u> –The Experimental Sacramento WRF_NMM is run locally at the WFO Sacramento and gives hourly output out to 48 hours. The high resolution model is used for operational forecasting and research in Northern California. Model Output graphics, generated by GEMPAK software, are posted for 3 hourly forecast time steps to the WFO Sacramento web page. The fields include geopotential heights, vorticity, temperatures, dew point, relative humidity, wind, vertical velocity, freezing level, precipitation amount and type, seal level pressure, thickness, clouds, precipitable water, convective available potential energy (CAPE), and convective inhibition (CIN).   The model would replace existing Workstation Eta output on the website.

b. <u>Purpose</u> – The high resolution model output can be used for operational forecasting and research in Northern California. We expect to use the model qualitatively to help refine phenomena related to terrain such as temperature, winds and orographically forced precipitation. This model should give some clues about how complex terrain can affect local weather in Northern California.

c. <u>Audience</u> – The main audience is the NWS Offices and other government agencies, such as the California Air Resources Board and the US Forest Service, located in Northern California. Other users may include local media, the general public and private weather forecasting companies and researchers.

d.   <u>Presentation Format</u> – The Sacramento WRF_NMM model output is displayable on a web page with static images in 3 hourly forecast time steps out to 48 hours. We will also add a looping feature in the future.

e. <u>Feedback Method/Period</u> – Most feedback comes from the Internet users through an email to <u>W-sto.Webmaster@noaa.gov</u>. Chris and Holly will then take the feedback and address any changes needed to the model parameters and/or the web page. Feedback may also be provided by mail or phone to:
　　　　Chris Hintz and Holly Osborne
　　　　National Weather Service
　　　　3310 El Camino Ave Suite #228
　　　　Sacramento, CA 95821-6308
　　　　Phone: (916)-979-3041
E-mail comments or questions can be sent to: <u>Chris.Hintz@noaa.gov</u> or <u>Holly.Osborne@noaa.gov</u> or <u>W-sto.Webmaster@noaa.gov</u>.
Comment Period – June 1, 2008 – August 31, 2008

f. <u>Example</u> – <u>http://www.wrh.noaa.gov/sto/sacwrf.php</u>

WRF THU 080327/0000V012 2m TEMP & 10m WINDS

Part II – Technical Description

a. <u>Format and Science Basis</u> –
The WRF_NMM is controlled and run locally with WRF_EMS software at the WFO
Sacramento. The model domain is centered over Northern California. The model has
configurations that can be modified. The current configurations can be found in
http://www.wrh.noaa.gov/sto/sacwrfdoc.php. The technical limitations of this product
are inherent in the parameterizations of the mesoscale model.   GEMPAK is used to create
readily accessible, useable, and understandable GIF images from the model output to display on
the webpage at http://www.wrh.noaa.gov/sto/sacwrf.php. Currently any Internet browser that
opens gif images is all that is required. Although in the future, when we add looping capability,
java will be required to view the model data loops.

2 Availability: The model is run four times a day out to 48 hours. The latest web graphics are
usually posted to the web page around 02Z, 08Z, 14Z, and 20Z.

3 Additional Information: Additional Sacramento WRF_NMM Model Output information is
available at:
 http://www.wrh.noaa.gov/sto/sacwrfdoc.php